UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

REPLY TO THE ATTENTION OF:

SR-6J

January 29, 1996

William Harmon
Michigan Department of Environmental Quality
P.O. Box 30426
Lansing, Michigan 48909-7528

Re: Review of: "Conceptual Model for Development of Remedial Action Objectives for the North Bronson Industrial Area Site" 12/22/95, in Bronson, MI.

Dear Bill:

Enclosed are the comments regarding the "Conceptual Model for Development of Remedial Action Objectives for the North Bronson Industrial Area Site" which were provided by Superfund's Technical Support Section.

Page 2, bullet 13: Instead of using bullet 13 as a reference, I recommend using, Supplemental Guidance to RAGS: Estimating Risk from Groundwater Contamination (U.S.EPA, 1993).

Page 3: Determining whether soil, sediment and water samples are below levels protective of human health, based on a generic industrial exposure, may be inappropriate, per Part 201. First of all, the site must be slated for industrial development, with deed restrictions, etc. Second, generic industrial numbers are usually used for single chemical single pathway evaluations. This is inappropriate for this site where a multi-chemical and multi-pathway evaluation is warranted.

Page 4 Data Evaluation: When choosing and identifying chemicals of potential concern, the following Region 5 guidance should be consulted: U.S. Environmental Protection Agency (EPA), 1993, **Identification of Chemicals of Concern (COCs) at Superfund Sites for the Baseline Risk Assessment**, Memorandum from Andrew Podowski, EPA Region 5 Toxicologist, to Contractors, dated November 2, 1993. In the event that none of the tests are

definitive for a particular chemical, a lognormal distribution should be assumed, instead of normal, and Land's equation applied to estimate 95% UCL. If 95% UCL is an exaggerated value (as is expected with skewed data), then maximum value in data set is to be used as proxy for the 95% UCL, see RAGS Part A (U.S.EPA, 1989) page 6-19, 6-22. Furthermore, chemicals cannot be assumed to be distributed throughout the entire site (even for trespasser exposure), because the random nature of soil exposure must be to contaminated soil Not clean soil. That is, EPA is not concerned when a trespasser (or any receptor) is exposed to clean soil, but it is concerned only when exposure occurs to contaminated soil. This means it is necessary to appropriately define areas of contamination, and then to estimate the concentration term (95% UCL) for these areas.

If you're going to go through the exercise of performing goodness-of-fit tests on the data (which is very highly recommended), to estimate appropriate 95% UCLs, then you might as well make comparisons of site-related chemicals to background by following the generally accepted procedures. That is, to demonstrate that a site-related chemical is significantly elevated above background, the generally accepted procedure is to compare the mean values, using a parametric or nonparametric T-test.

Once COCs have been selected and identified, and their 95% UCLs estimated, it is fine to compare the 95% UCLs with generic industrial soil numbers and soil-to-water criteria (i.e., 20 x MCL). However, it must be kept in mind that the use of generic industrial numbers is not recommended because they are based upon generic algorithms, similar to ones used in U.S.EPA's SSL Guidance for residential exposures. Therefore, such values are suitable for screening purposes, to decide whether there is potential risk at a site (by considering single chemical concentrations), but not for site-specific cleanups. That is, these are values based upon a single chemical and single pathway and are inappropriate for multi-chemical and multi-pathway situations, where cumulative risk for several chemicals is the driver.

Furthermore, generic Industrial numbers (presumably meant for cleanup), aside from being meant for single chemical and single pathway situations, are generic in nature and, therefore, often differ from Superfunds Industrial Health Based Limit (HBL) cleanup numbers (also meant for single chemical and single

pathway situations). This is so because of differences in default parameter values used. For example, the generic industrial scenario uses an exposure frequency (EF) of 112 days/yr for the industrial worker, while Superfund uses 250 d/yr. Thus, for arsenic as an example, the generic industrial conc at 10^{-5} CR is 83 ppm, while Superfunds HBL is 33 ppm at 10^{-5}. Thus, Superfund is more conservative in requiring a lower concentration for cleanup. Another example is B[a]P where the generic industrial concentration at 10^{-5} cancer risk is 21,000 ppb, while Superfunds HBL is ca. 7800 ppb. Obviously, this will result in different "action" levels for contaminants. Therefore, "action" levels should be reexamined in light of Superfunds guidance policy, plus the appropriateness of their use in multichemical and multipathway situations, as at this site.

Therefore, even for screening purposes, generic numbers differ from Superfunds HBL numbers.

Therefore, the use of risk-based PRGs is the acceptable method for cleanup.

For soil-to-water criteria, rather than using 20 x MCL, it is recommended that the Pollute model, or algorithm 8 in: Draft Guidance For Soil Screening Level Framework, July, 1994, or other appropriate model be used to evaluate potential concentrations in groundwater from soil, and/or evaluate generically 'safe concentrations' in soil, for individual chemicals only, and for appropriate receptor scenario.

For GSI the Migrate model, or other appropriate model may be used to evaluate impact of groundwater on surface water.

Attached please find copies of the following documents:

- Identification of Chemicals of Concern (COCs) at Superfund Sites for the Baseline Risk Assessment
- Supplemental Guidance to RAGS: Estimating Risk from Groundwater Contamination

Regarding the sewer investigation issue, I have attached a response I received from our Technical Support Section. Do you have the exact measurements of the sewer? If not, can we find this information out? It seems that we might be able to do an ih-house investigation if we are within the limits, i.e., sewer diameter <2', etc.

If you have any questions regarding the above comments, please contact me (312)886-7251 or Andrew Podowski at (312)886-7573.

Sincerely,

R. Clarke Moreno

Rosita Clarke-Moreno
Remedial Project Manager

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5

DATE: January 29, 1996

SUBJECT: Review of: "Conceptual Model for Development of Remedial Action Objectives for the North Bronson Industrial Area Site" 12/22/95, in Bronson, MI.

FROM: Andrew Podowski, Toxicologist
Technical Support Unit

TO: Rosita Clarke-Moreno, RPM

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I hope this information is useful to you. If you have any further questions, please call me at 6-7573.